

Applicant(s): HAENER, et al.
Serial No.: 10/509,227
Filed: September 24, 2004

REMARKS

This response to the Office Action dated January 29, 2009 is intended to be fully responsive to all points of objection and/or rejection raised by the Examiner and is believed to place the application in a condition for allowance. Favorable reconsideration and allowance of the application are respectfully requested.

Applicants assert that the present invention is new, non-obvious and useful. Prompt consideration and allowance of the claims is respectfully requested.

Status of Claims

Claims 1-26 are pending in the application. Claims 1-10, 12, 13, 16, 18, 19, 21, 23, 24 and 26 have been amended. The amendments to the claims add no new matter.

35 U.S.C. § 103(a) Rejections

Madden (US 4,502,213) in view of Hale (US 4,325, 797) and D'Muhala (US 5,776,330)

The Office Action of January 29, 2009 rejected Claims 1-5, 8-20 and 22-26 under 35 U.S.C. § 103(a), as being unpatentable over Madden (US 4,502,213) in view of Hale (US 4,325, 797) and in view of D'Muhala (US 5,776,330). Applicants traverse this rejection.

Applicants respectfully submit that none of Madden, Hale, or D'Muhala, alone, or taken together, discloses, teaches or suggests the limitations of independent Claims 1 and 19 as amended.

Claim 1, as amended, recites, inter alia: "Handheld apparatus for the preparation of an electrochemical sensor ... comprising a holder for the sensor", wherein:

- the holder, the dispenser for the electrolyte and the dispenser for the membrane are arranged within a common housing that is able to be handheld...
- ...housing comprising a housing upper part and housing lower part being mutually displaceably mounted in a direction of displacement, the upper part being capable of being moved by hand in a direction of displacement;
- the holder is fixedly arranged with respect to said common housing, with the

housing lower part comprising an opening where the opening leads to the holder to engage the electrochemical sensor;

- the common housing further comprising an actuator which is displaceably mounted;
- ...the actuator comprising a plurality of plungers capable of either linear or rotational movement in connection with the actuator wherein:
- a first plunger releases electrolyte from a container opened by pressure exerted on the actuator ...; and
- a second plunger by pressure exerted downwardly on the actuator releases the membrane with a pressing surface that reproducibly displaces the electrolyte with the plungers being moveably perpendicular to the direction of displacement.

Claim 19 is a method claim having different limitations. However, for the purposes of this argument, claim 19 makes correspondingly similar recitals.

Neither Madden, nor Hale, nor D'Muhala, alone or taken together, teach or imply the recitals in Claim 1 and 19 as amended. As the Applicants have respectfully pointed out in the October 2, 2008 response on page 9, Madden refers to a technique for large-scale re-chargeable battery assembly — not the refurbishment of an “electrochemical sensor” with a “hand-held” apparatus/method as is recited in Applicants’ claims. As Madden states, “[e]lectrochemical cells to which the present invention is advantageously applied are of the rechargeable type, e.g., nickel-cadmium rechargeable cells packaged in a cylindrical casing”. Col. 1, ln. 18-19. This is not the type of electrical device that is recited in Applicants’ Claims 1 and 19. In short, Madden does not disclose, teach or suggest a way for an “electrochemical sensor” to be furnished with both “electrolyte” and “membrane” as is recited in Claims 1 and 19.

In the Office Action of January 29, 2009, and in the previous Office Action of April 2, 2008, the Examiner analogized that the battery casing in Madden is a “holder for the electrochemical sensor”. See, e.g. Office Action of January 29, 2009, p.2 (“...the cell casing (holding means), ...is advanced...”). Again, Applicants submit, respectfully, that is not so. Further, the Examiner cites to nothing in Madden that describes or teaches how the battery casing might be “held” for its travel. Madden describes an “indexing table” with a “plurality of cell receptacles, called ‘nests’” (e.g. col. 3,

ln. 12-13), but there is no description of any “housing lower part comprising an opening where the opening leads to the holder to engage the electrochemical sensor”. The nest does not “engage”; it only “receives”, e.g. Col. 5, ln. 67. See also, Col 6, ln. 47-48 (“cells which are loaded onto the index table have a random tab orientation”). Thus, it is clear that Madden does not describe a “holder to engage the electrochemical sensor” as recited in claim 1, as amended.

In addition to this lack of a “holder to engage the electrochemical sensor”, there are other elements in Claim 1, as amended, which are not disclosed, taught or implied by Madden. For example, Claim 1, as amended, recites, inter alia, a “housing comprising a housing upper part and housing lower part being movably coupled and the housing upper part being capable of being moved by hand in a direction of displacement”. This element is not described, taught or suggested by Madden. No text in Madden describes, teaches or implies any mechanism with a “a housing upper part and a housing lower part being mutually displaceably mounted in a direction of displacement, the housing upper part being capable of being moved by hand in a direction of displacement”. Madden, in fact, teaches sharply away from this recital, providing an industrially sized and “automated” apparatus not an apparatus that is humanly holdable and “capable of being moved by hand”. See, Madden, Col. 2, ln. 67-Col. 3, ln. 2 (“automatic apparatus capable of performing, in a new and unique manner, steps which previously were carried out by hand.” (emphasis added)) and Col. 5, ln. 46-50, (“All operations accomplished in the automated process ... are executed under the control of a digital controller” (emphasis added)). Embodiments of the present invention define steps for a user to prepare an electrochemical sensor.

Madden also does not describe, teach or imply any type of “actuator...displaceably mounted” or any type of “actuator comprising a plurality of plungers capable of either linear or rotational movement in connection with the actuator”. As the Examiner observed in the Office Action of January 29, 2009, “Madden does not teach a membrane dispenser”. See, p. 4. Madden thus also cannot teach any kind of membrane dispenser with an “actuator” or “plungers”. Further, electrolyte in Madden is described as being provided only grossly to the entire cell. Madden states:

a cell can be stopped momentarily at a station 42 which dispenses fluid electrolyte into the open end of the cell. This electrolyte is absorbed into the separator material between the electrode plates. (Col. 5, ln. 29-32)

This text cannot disclose, teach or imply any “actuator comprising a plurality of plungers” where “a first plunger releases electrolyte from a container opened by pressure exerted on the actuator so that electrolyte is applied to the sensor head” as is recited in Claim 1, as amended. Because electrolyte in Madden is handled grossly, Madden does not disclose, teach or imply that a “plunger releases electrolyte...so that electrolyte is applied to the sensor head”. Claim 19 has analogous recitals, which, again, are not disclosed or taught by Madden.

Thus, Madden does not disclose, teach or suggest all of the elements of Claim 1 or Claim 19.

Madden also cannot be used in combination with Hale or D’Muhala to disclose any elements missing from Madden.

Hale, like Madden, does not disclose, teach or suggest the limitations of Claim 1 or Claim 19, as amended. For example, relevant to the recitals above in Claim 1, as amended, Hale does not disclose, teach or suggest, inter alia, an apparatus where the holder, the dispenser for the electrolyte and the dispenser for the membrane are arranged within a common housing” (emphasis added). Hale does not provide full mechanisms for each of these elements. As the Applicants noted in the previous Office Action response, with Hale, a user is left on his or her own to provide electrolyte. See, Col 10, ln. 44-46 and see, Col. 7, ln. 30-33: “Prior to applying membrane 15, the electrolyte-receiving portions or recesses (not shown) are filled to saturation in a conventional manner...”. Also with Hale a user must also place a membrane by hand onto the sensor face. See, Col. 10, ln. 56-58. Such a description does not disclose, teach or imply a system, which provides both a “dispenser for the electrolyte” and a “dispenser for the membrane” that, are “arranged in a common housing”.

Combining Hale with Madden and D’Muhala, the Office Action of January 1, 2009 contends Hale teaches “a method of mounting and securing a membrane of polymer film on an amperometric cell” See p. 3. Applicants respectfully assert that whatever the truth of the this statement, this does not mean that Hale teaches any kind of method or apparatus for “dispensing a membrane” as is recited in claim 1 as amended. A method or apparatus for dispensing a membrane is not disclosed, taught or implied by Hale, since Hale teaches that a user must place a membrane on the sensor by hand.

In addition, Claim 1, as amended, recites, inter alia, “an actuator ... comprising a plurality of plungers ... wherein:

- “a first plunger releases electrolyte from a container opened by pressure exerted on the actuator ...;” and

- “a second plunger by pressure exerted downwardly on the actuator releases the membrane with a pressing surface that reproducibly displaces the electrolyte with the plungers being moveably perpendicular to the direction of displacement.”

Hale does not disclose, teach or imply any “first plunger” to release electrolyte from a container. This is clear from the lack of any apparatus for dispensing electrolyte. Hale also does not provide a “second plunger” as recited in Claim 1, as amended. Hale provides only a mechanism to clamp a collar onto the already (hand) placed membrane. That is not releasing a membrane from a dispenser for the membrane. As Hale states:

...push die ring 20 on to the lower end of plunger tube 522 sufficiently firmly so it cannot fall off....continue turning cam 51 to its limit to force die ring 20 from its temporary position on 522 to its final position on cylindrical cell end 12 of sensor 54. (Col. 10, ln. 47-65)

Further, the use of a “cam” in Hale, where Hale teaches that the collar is dispensed by turning a “cam” (e.g. “lower plunger 52 slowly by turning cam 51”) is not providing a membrane to a sensor by “pressure exerted downwardly on the actuator”.

Claim 19 has recitals, analogous to the Claim 1 recitals discussed above, which are also not disclosed, taught or implied by Hale.

Thus, Hale does not disclose, teach or suggest the elements of either of Claims 1 or 19, as amended. It is respectfully asserted that Hale also cannot be used with Madden and D’Muhala as the basis for an obviousness rejection.

Turning to D’Muhala, the Office Action of January 29, 2009 rejected Claim 1 stating that although “Madden and Hale are silent about the apparatus being handheld”, D’Muhala “teaches a handheld apparatus that dispenses an electrolyte and is connected to electrodes.” See, p. 3. Applicants respectfully disagree that D’Muhala would be directly relevant to a “[h]andheld apparatus for the preparation of an electrochemical sensor”. D’Muhala, for example, does not disclose an electrochemical sensor that requires a membrane, nor does D’Muhala address preparing an electrochemical sensor in such a way that no error occurs. Further, Applicants respectfully contend that D’Muhala does not disclose, teach or suggest certain elements of Claim 1, as amended, for example, a handheld apparatus where “the holder, the dispenser for the electrolyte and the dispenser for the membrane are arranged within a common housing that is able to be handheld”.

In contrast to the “[h]andheld apparatus for the preparation of an electrochemical sensor” of Claim 1 as amended, D’Muhala discloses “methods and apparatus for quickly and inexpensively removing contamination from a variety of surfaces...” Col 1, ln. 67-Col. 2, ln. 1. The system in D’Muhala comprises, in part, a “housing 20”, “fluid delivery means 60” and “fluid supply lines 62a, 62b”. See , Col. 4, ln. 10-20 and Col. 6, ln. 25-26. Those elements as described in D’Muhala do not provide a handheld apparatus where “...the dispenser for the electrolyte” is “arranged within a common housing that is able to be handheld”, because D’Muhala’s apparatus in total is incapable of being handheld. For example, regarding the “fluid delivery means 60”, D’Muhala states:

...the first and second electrolyte fluids 38a, 38b are delivered from external fluid reservoirs (not shown) to each one of the respective first and second channels 34a, 34b via the first and second fluid supply lines 62a, 62b....the flowrate and pressure of the first and second electrolyte fluids 38a, 38b may be controlled via pumps 64a, 64b...Particularly preferable are peristaltic pumps having a two-tube pump head...controlled via an on-off switch and a voltage controller. (Col. 6, ln. 22-37)

Such a pumping system apparatus is not handheldable and D’Muhala’s does not disclose, teach or imply a “dispenser for the electrolyte” that is “within a common housing that is able to be handheld”.

Claim 1, as amended also recites, inter alia, an “actuator comprising a plurality of plungers ... wherein a first plunger releases electrolyte from a container opened by pressure exerted on the actuator so that electrolyte is applied to the sensor head” In D’Muhala, each applicator receives electrolyte fluid from a “fluid pathway” and “applies the fluid to the surface being decontaminated.” (Col. 5, ln. 6-10). Surfaces in D’Muhala are “piping, vessels, valves, and the like...exposed to radioactive contamination”— not an electrochemical sensor head. An application for applying electrolyte on such surfaces does not disclose, teach or suggest not applying electrolyte “to a sensor head” as is recited in claim 1 as amended. In addition to the differences noted above, D’Muhala also does not disclose, teach or suggest the recitals of Claim 1, because the supplying of electrolyte along a “fluid pathway” and using a pump, as in in D’Muhala, is not an application where a “plunger releases electrolyte from a container opened by pressure exerted on the actuator”. Thus D’Muhala, like Hale and Madden, does not disclose, teach or imply the elements of Claim 1, and correspondingly of Claim 19.

The limitations of Applicants' claims 1 and 19 are not disclosed, taught or suggested by any combination of Madden, Hale and D'Muhala.

Accordingly, it is respectfully submitted that Claims 1 and 19 are allowable. Each of Claims 2-5, 8-18, 20 and 22-26 depends from one of Claims 1 or 19 and also includes the limitations of the claim from which it depends, and thus each of these dependent claims is likewise allowable. Accordingly, it is respectfully asserted that the rejection of Claims 1-5, 8-20 and 22-26 under 35 U.S.C. § 103(a), as being unpatentable over Madden in view of Hale and in view of D'Muhala be withdrawn.

McGandy (US 4,285,792), Cortina (US 4,738,765) and Patt (US 3,946,599)

The Office Action of April 2, 2008 rejected Claim 6 under 35 U.S.C. § 103(a), as being unpatentable over Madden, Hale and D'Muhala, as applied to claims 1-5, 8-20 and 22-25 and further in view of McGandy (US 4,285,792). The Office Action rejected Claim 7 under 35 U.S.C. § 103(a), as being unpatentable over Madden, Hale and D'Muhala, as applied to claims 1-5, 8-20 and 22-25 and further in view of Cortina (US 4,738,765). The Office Action rejected Claim 21 under 35 U.S.C. § 103(a), as being unpatentable over Madden, Hale and D'Muhala, as applied to claims 1-5, 8-20 and 22-25 and further in view of Patt (US 3,946,599).

Claims 6 and 7 depend on Claim 1, as amended. As described above, none of Madden, Hale, or D'Muhala, alone, or taken together, disclose, teach or suggest the all the limitations of Claim 1, as amended. McGandy and Cortina do not cure the deficiencies of Madden, Hale, or D'Muhala. For example, the cleansing system in McGandy "...includes a paddlewheel 45 and a plurality of cleansing brushes 46" (Col. 3, ln 45-46). McGandy does not disclose, teach or suggest a "an element for cleaning the sensor head" of an electrochemical sensor, where, inter alia, "the element for cleaning mechanically cleans the sensor head of the sensor held in the holder" as is recited in Claim 6, as amended. Cortina describes a system using a "ring nut" and "screw" device to fasten a "membrane sandwich". That does not not teach or suggest an element for the removal of the membrane as is recited in Claim 7.

In addition, as discussed, none of Madden, Hale, or D'Muhala alone, or taken together, discloses, teaches or suggests the the limitations of Claim 19, as amended. Patt does not cure the deficiencies of Madden, Hale, or D'Muhala. Claim 21 depends from claim 19. Applicants

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respectfully dispute that the "screw-on cap" mechanism described in Patt and which is cited to by the Office Action of January 29, 2009 teaches or suggests an apparatus or method for the "preparation of an electrochemical sensor" in a "compulsory guided manner" as recited in Claim 21, as amended. The Examiner does not show, for example, how Patt teaches the "compulsory" aspect. Accordingly, Madden, Hale or Patt in any combination do not disclose, teach or suggest all of the limitations of Claim 21.

Applicants request that the Examiner withdraw the rejections of claims 6, 7 and 21 under 35 U.S.C. § 103.

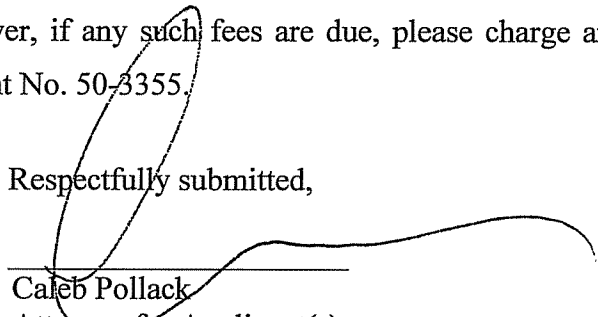
CONCLUSION

In view of the foregoing amendments and remarks, and for at least the reasons discussed above, Applicants respectfully submit that the pending Claims 1-26 are allowable. Their favorable consideration and allowance is respectfully requested.

The Examiner is invited to telephone the undersigned to discuss any still outstanding matters with respect to the present application.

The fees for the petition for extension of time and RCE are being paid separately. No other fees are believed to be due. However, if any such fees are due, please charge any fees associated with this paper to deposit account No. 50-3355.

Respectfully submitted,



Caleb Pollack
Attorney for Applicant(s)
Registration No. 37,912

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Pearl Cohen Zedek Latzer, LLP.
1500 Broadway, 12th Floor
New York, NY 10036
Phone: (646) 878-0800
Fax: (646) 878-0801